Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of transmitting a message through a common packet channel (CPCH) ~~in a mobile~~ of a communication system, comprising:

receiving status information of each of a plurality of CPCHs from the system;

~~selecting one of the plurality of CPCH, based on the status information;~~

transmitting a first preamble ~~a signature~~ to the system ~~to request allocation of the selected CPCH~~, said first preamble having one of a plurality of signatures, where ~~the signature has one-to-one correspondence to~~ each of a plurality of scrambling codes used for the CPCH has a one-to-one correspondence to a signature;

~~receiving~~ transmitting ~~a~~ at least one second ~~channel allocation indicator from~~preamble to the system; and,

transmitting ~~a~~ the message to the system through at least one ~~allocated~~ CPCH, wherein a channelization code for a control part of the message is spread by a code $C_c=C_{256,0}$ of Orthogonal Variable Spreading Factor (OVSF) codes and a data part of the message is spread by a code $C_d=C_{SF,k}$ of the OVSF codes, and wherein SF is the spreading factor of the data part, and $k=SF/y$, wherein y is an integer greater than 0.

2. (Currently Amended) The method of claim 1, wherein the first preamble corresponds to an access preamble part of the CPCH, and each of the plurality of scrambling codes for the CPCH has a one-to-one correspondence to an access sub-channel used by ~~an~~ the access preamble part of the CPCH.

3. (Currently Amended) The method of claim 1, wherein ~~the signature used to request allocation of a CPCH comprises an access preamble part of the CPCH~~ SF is 4, 8, 16, 32, 64, 128 or 256 and y is 4.

4. (Currently Amended) The method of claim 1, wherein ~~each of the plurality of scrambling codes~~the scrambling code corresponding to the signature is used to scramble the message ~~parts~~ of the CPCH.

5. (Currently Amended) A method for receiving a message through one of ~~allocating~~ a plurality of common packet channels (CPCHs), comprising:

transmitting status information of ~~a~~ the plurality of CPCHs from a system to at least one mobile station;

~~selecting one of the plurality of CPCHs based on the status information, and transmitting~~ receiving at least one ~~an access~~ preamble ~~(AP)~~ ~~with~~ having one of a plurality of

signatures ~~a signature~~ from the at least one mobile station ~~to~~ by the system ~~to request allocation of the selected CPCH, the signature mapping with at least one scrambling code~~, wherein each of a plurality of scrambling codes used for the CPCH has a one-to-one correspondence to a signature;

transmitting ~~a channel allocation indicator channel (CA-ICH) of at least one CPCH to be allocated from the system to the mobile station, the CA-ICH having a signature mapped with at least one scrambling code~~at least one indicator from the system to at least one mobile station in response to the at least one preamble; and

~~transmitting~~ receiving a message from the mobile station ~~to~~ by the system through at least one ~~available physical channel using the at least one scrambling code of the CA-ICH~~CPCH, wherein

a channelization code for a control part of the message corresponds to a code $C_c=C_{256,0}$ of Orthogonal Variable Spreading Factor (OVSF) codes and a channelization code for a data part of the message corresponds to a code $C_d=C_{SF,k}$ of the OVSF codes, and wherein SF is the spreading factor of the data part, and k=SF/y, wherein n is an integer greater than 0.

6. (Currently Amended) The method of claim 5, ~~further comprising:~~ wherein the at least one preamble includes an access preamble and a collision detection preamble and at least one indicator comprises an acknowledgement signal and a collision detection indicator such that

the system

~~transmitting an~~ transmits the acknowledgment signal ~~from the system~~ to the at least one mobile station in response to the access preamble~~to indicate that the desired CPCH is available, before transmitting the CA-ICH;~~ and receives

~~transmitting a~~ the collision detection preamble (CD-P) ~~with a signature from the mobile station to the system~~ in response to the acknowledgment signal, ~~the signature mapping with at least one scrambling code~~; and

~~determining~~ determines whether~~whatever~~ a collision has occurred ~~when only one CD-P is received transmitting a signature equal to that of the received CD-P to the mobile station through a collision detection acquisition indicator channel (CD-AICH) transmitting a signature equal to that of the CD-P having the highest power among received CD-Ps from the system to the base station through the CD-AICH~~.

7. (Currently Amended) The method of claim 6, wherein it is determined that a collision has not occurred when only one ~~CD-P~~ collision detection preamble is received, and it is determined that a collision has occurred when more than one ~~CD-P~~ collision detection preamble is received.

8. (Currently Amended) The method of claim 7, further comprising transmitting a signature equal to that of the ~~received CD-P~~ collision detection preamble to the mobile station ~~through a collision detection acquisition indicator channel (CD-AICH)~~ if no collision has occurred and transmitting a signature equal to that of the ~~CD-P~~ collision detection preamble having the highest power among received ~~CD-Ps~~ collision detection preambles from the system ~~to the base station through the CD-AICH~~ if a collision has occurred.

9. (Currently Amended) A method for ~~allocating~~ transmitting a message through one of a plurality of common packet channels (CPCHs), comprising:

transmitting status information of the CPCHs from a system to ~~a~~ at least one mobile station;

~~selecting a specific CPCH to be used based on the status information and generating~~transmitting an access ~~presample~~ preamble (AP)~~, comprising a signature indicative of the selected CPCH, minimum spreading factor of the specific CPCH, and a maximum data rate, the signature mapping with scrambling codes having a channelization OVSF code tree in a message part of the specific CPCH, and a channelization code of a data part and a control part in the message part being selected in the code tree~~ having one of a plurality of signatures, wherein each of a plurality of scrambling codes used for the CPCH has a one-to-one correspondence to a signature and a channelization code for a control part of the message is

spread by a code $C_c=C_{256,0}$ of Orthogonal Variable Spreading Factor (OVSF) codes and a data part of the message is spread by a code $C_d=C_{SF,k}$ of the OVSF codes, and wherein SF is the spreading factor of the data part, and k=SF/y, wherein y is an integer greater than 0 ; and

transmitting the AP containing the signature from the system to the mobile station ~~to request allocation of the specific CPCH~~.

10. (Original) The method of claim 9, wherein the mobile station maps signatures of the CPCHs that can be serviced by the system with different scrambling codes.

11. (Currently Amended) ~~The method of claim 9~~ A method for transmitting a message through one of a plurality of common packet channels (CPCHs), comprising:

transmitting status information of the CPCHs from a system to at least one mobile station;

transmitting an access preamble (AP) having one of a plurality of signatures, wherein each of a plurality of scrambling codes used for the CPCH has a one-to-one correspondence to a signature and a channelization code for a control part of the message is spread by a code $C_c=C_{256,0}$ of Orthogonal Variable Spreading Factor (OVSF) codes and a data part of the message is spread by a code $C_d=C_{SF,k}$ of the OVSF codes, and wherein SF is the spreading factor of the data part, and k=SF/y, wherein y is an integer greater than 0 ; and

transmitting the AP containing the signature from the system to the mobile station, wherein the mobile station divides a specific scrambling code into chip codes of a prescribed length, and the signatures of the CPCHs are mapped with the divided scrambling chip codes.

12. (Currently Amended) ~~The method of claim 9~~ A method for transmitting a message through one of a plurality of common packet channels (CPCHs), comprising:

transmitting status information of the CPCHs from a system to at least one mobile station;

transmitting an access preamble (AP) having one of a plurality of signatures, wherein each of a plurality of scrambling codes used for the CPCH has a one-to-one correspondence to a signature and a channelization code for a control part of the message is spread by a code $C_c=C_{256,0}$ of Orthogonal Variable Spreading Factor (OVSF) codes and a data part of the message is spread by a code $C_d=C_{SF,k}$ of the OVSF codes, and wherein SF is the spreading factor of the data part, and $k=SF/y$, wherein y is an integer greater than 0 ; and

transmitting the AP containing the signature from the system to the mobile station, wherein the mobile station selects ~~one of codes~~ a code located in an up branch from a node having a spreading factor of 2 in a code tree of the scrambling codes as a channelization code of the data part, and selects a code located last among ~~the~~ a plurality of codes of a down branch from the node having the spreading factor of 2 as a channelization code of the control part.

13. (Currently Amended) ~~The method of claim 9~~ A method for transmitting a message through one of a plurality of common packet channels (CPCHs), comprising:

transmitting status information of the CPCHs from a system to at least one mobile station;

transmitting an access preamble (AP) having one of a plurality of signatures, wherein each of a plurality of scrambling codes used for the CPCH has a one-to-one correspondence to a signature and a channelization code for a control part of the message is spread by a code $C_c=C_{256,0}$ of Orthogonal Variable Spreading Factor (OVSF) codes and a data part of the message is spread by a code $C_d=C_{SF,k}$ of the OVSF codes, and wherein SF is the spreading factor of the data part, and k=SF/y, wherein y is an integer greater than 0 ; and

transmitting the AP containing the signature from the system to the mobile station, wherein the mobile station selects a code located last among a plurality of codes in an up branch from a node having a spreading factor of 2 as a channelization code of the control part, selects a lower node of two nodes having a spreading factor of 4 from a node having a spreading factor of 2, and selects one of a plurality of codes in the up branch from the selected lower node as a channelization code of the data part.

14. (Currently Amended) ~~The method of claim 9~~ A method for transmitting a message through one of a plurality of common packet channels (CPCHs), comprising:

transmitting status information of the CPCHs from a system to at least one mobile station;

transmitting an access preamble (AP) having one of a plurality of signatures, wherein each of a plurality of scrambling codes used for the CPCH has a one-to-one correspondence to a signature and a channelization code for a control part of the message is spread by a code $C_c=C_{256,0}$ of Orthogonal Variable Spreading Factor (OVSF) codes and a data part of the message is spread by a code $C_d=C_{SF,k}$ of the OVSF codes, and wherein SF is the spreading factor of the data part, and $k=SF/y$, wherein y is an integer greater than 0 ; and

transmitting the AP containing the signature from the system to the mobile station, wherein a number of the scrambling codes mapped with the signature is equal to 32 divided by ~~the~~ a minimum spreading factor.

15.-16. (Canceled)

17. (Currently Amended) ~~The method of claim 15~~ A method for allocating common packet channels (CPCHs), comprising:

transmitting status information of a plurality of CPCHs from a system to a mobile station;

selecting a desired CPCH in accordance with the status information;

transmitting an access preamble (AP), comprising a signature indicative of the selected CPCH, a minimum spreading factor of the CPCH, and a maximum data rate, to the system;

transmitting a channel allocation indicator of at least one of the plurality of CPCHs to be allocated, from the system to the mobile station in accordance with the minimum spreading factor and the maximum data rate received from the mobile station, the channel allocation indicator having a signature mapped with at least one scrambling code such that there is a one-to one correspondence between each of a plurality of scrambling codes used for the CPCH and the signature;; and

transmitting a message from the mobile station to the system using channelization codes of a data part and a control part in the message part being selected in the code tree, wherein the system divides a specific scrambling code into chip codes of a prescribed length, and the respective signatures of the CA-ICH are mapped with the divided chip codes.

18. (Currently Amended) ~~The method of claim 15~~ A method for allocating common packet channels (CPCHs), comprising:

transmitting status information of a plurality of CPCHs from a system to a mobile station;

selecting a desired CPCH in accordance with the status information;

transmitting an access preamble (AP), comprising a signature indicative of the selected CPCH, a minimum spreading factor of the CPCH, and a maximum data rate, to the system;

transmitting a channel allocation indicator of at least one of the plurality of CPCHs to be allocated, from the system to the mobile station in accordance with the minimum spreading factor and the maximum data rate received from the mobile station, the channel allocation indicator having a signature mapped with at least one scrambling code such that there is a one-to one correspondence between each of a plurality of scrambling codes used for the CPCH and the signature;; and

transmitting a message from the mobile station to the system using channelization codes of a data part and a control part in the message part being selected in the code tree, wherein the mobile station selects one of a plurality of codes located in an up branch from a node having a spreading factor of 2 in a code tree of the scrambling codes as a channelization code of the data part, and selects a code located last among a plurality of codes of a down branch from the node having the spreading factor of 2 as a channelization code of the control part.

19. (Currently Amended) ~~The method of claim 15~~ A method for allocating common packet channels (CPCHs), comprising:

transmitting status information of a plurality of CPCHs from a system to a mobile station;

selecting a desired CPCH in accordance with the status information;

transmitting an access preamble (AP), comprising a signature indicative of the selected CPCH, a minimum spreading factor of the CPCH, and a maximum data rate, to the system;

transmitting a channel allocation indicator of at least one of the plurality of CPCHs to be allocated, from the system to the mobile station in accordance with the minimum spreading factor and the maximum data rate received from the mobile station, the channel allocation indicator having a signature mapped with at least one scrambling code such that there is a one-to one correspondence between each of a plurality of scrambling codes used for the CPCH and the signature; and

transmitting a message from the mobile station to the system using channelization codes of a data part and a control part in the message part being selected in the code tree, wherein the mobile station selects a code located last among a plurality of codes in an up branch from a node having a spreading factor of 2 as a channelization code of the control part, selects a lower node of two nodes having a spreading factor of 4 from a node having a spreading factor of 2, and selects one of a plurality of codes in the up branch from the selected lower node as a channelization code of the data part.

20. (Currently Amended) ~~The method of claim 15~~ A method for allocating common packet channels (CPCHs), comprising:

transmitting status information of a plurality of CPCHs from a system to a mobile station;

selecting a desired CPCH in accordance with the status information;

transmitting an access preamble (AP), comprising a signature indicative of the selected CPCH, a minimum spreading factor of the CPCH, and a maximum data rate, to the system;

transmitting a channel allocation indicator of at least one of the plurality of CPCHs to be allocated, from the system to the mobile station in accordance with the minimum spreading factor and the maximum data rate received from the mobile station, the channel allocation indicator having a signature mapped with at least one scrambling code such that there is a one-to one correspondence between each of a plurality of scrambling codes used for the CPCH and the signature; and

transmitting a message from the mobile station to the system using channelization codes of a data part and a control part in the message part being selected in the code tree, wherein the number of the scrambling codes mapped with the respective signatures of the CA-ICH is equal to 32 divided by the minimum spreading factor.

21-44. (Cancelled)

45. (Currently Amended) A method of spreading a message part ~~allocating codes~~ for a common packet channel ~~message of a communication system from an orthogonal variable spreading factor (OVSF) code tree scheme~~, comprising:

~~selecting a channelization code for~~spreading a control part of said message part by a code $C_c=C_{256,0}$ of Orthogonal Variable Spreading Factor (OVSF) codes ~~as $C_{256,0}$;~~ and

~~selecting a channelization code for~~ spreading a data part of said message part by a code $C_d=C_{SF,k}$ of the OVSF codes~~as $C_{SF,k}$~~, wherein SF is the spreading factor of the data part, and wherein k=SF/4.

46. (Previously Presented) The method of claim 45, wherein the data part uses the code from spreading factor 4 to 256.

47. (Previously Presented) A method of spreading a message part ~~allocating codes~~ for a common packet channel ~~message of a communication system form as orthogonal variable spreading factor (OVSF) code tree scheme~~, comprising:

spreading ~~selecting a channelization code for a~~ control part of said message part by a code $C_c=$ as $C_{256,128}$ of Orthogonal Variable Spreading Factor (OVSF) codes~~as $C_{256,128}$~~; and

~~selecting a channelization code for~~ spreading a data part of said message part by a code $C_d=C_{SF,k}$ of the OVSF codes~~as $C_{SF,k}$~~, wherein SF is the spreading factor of the data part, and wherein k=3*SF/4.

48. (Previously Presented) The method of claim 47, wherein the data part uses the code from spreading factor 4 to 256.

49. (New) The method of claim 1 or 4, wherein there are 64 uplink scrambling codes defined per cell and 32768 scrambling codes defined in the system.

50. (New) The method of claim 49, wherein the 32768 scrambling codes are divided into 512 groups with 64 codes in each group and there is a one-to-one correspondence between the group of scrambling codes for the preamble in the cell and a primary scrambling code used in the downlink of the cell.

51. (New) The method of claim 50, wherein an n:th scrambling code for the message corresponds to $S_{c\text{-}msg,,n}$, where $n = 8192,8193, \ldots,40959$ is based on a scrambling sequence and $n = 64\times m + k + 8176$, where m, k =16,17,..., 79 and m = 0, 1, 2, ..., 511.

52. (New) The method of claim 51, wherein when long scrambling codes are used, $S_{c\text{-}msg,n}(i) = C_{long,n}(i)$, $i = 0, 1, \ldots, 38399$, where a lowest index corresponds to the chip transmitted first in time.

53. (New) The method of claim 51, wherein when short scrambling codes are used, $S_{c\text{-}msg,n}(i) = C_{short,n}(i)$, $i = 0, 1, \ldots, 38399$.

54. (New) The method of claim 5, wherein SF is 4, 8, 16, 32, 64, 128 or 256 and y is 4.

55. (New) The method of claim 5, wherein the scrambling code corresponding to the signature is used to scramble the message of the CPCH.

56. (New) The method of claim 5 or 55, wherein there are 64 uplink scrambling codes defined per cell and 32768 scrambling codes defined in the system.

57. (New) The method of claim 56, wherein the 32768 scrambling codes are divided into 512 groups with 64 codes in each group and there is a one-to-one correspondence between the group of scrambling codes for the preamble in the cell and a primary scrambling code used in the downlink of the cell.

58. (New) The method of claim 57, wherein an n:th scrambling code for the message corresponds to $S_{c\text{-}msg,n}$, where $n = 8192, 8193, \ldots, 40959$ is based on a scrambling sequence and $n = 64 \times m + k + 8176$, where m, $k = 16, 17, \ldots, 79$ and $m = 0, 1, 2, \ldots, 511$.

59. (New) The method of claim 58, wherein when long scrambling codes are used, $S_{c\text{-}msg,n}(i) = C_{long,n}(i)$, $i = 0, 1, \ldots, 38399$, where a lowest index corresponds to the chip transmitted first in time.

60. (New) The method of claim 58, wherein when short scrambling codes are used, $S_{c\text{-}msg,n}(i) = C_{short,n}(i)$, $i = 0, 1, \ldots, 38399$.

61. (New) The method of claim 9, wherein SF is 4, 8, 16, 32, 64, 128 or 256 and y is 4..

62. (New) The method of claim 9, wherein the scrambling code corresponding to the signature is used to scramble the message of the CPCH.

63. (New) The method of claim 9 or 62, wherein there are 64 uplink scrambling codes defined per cell and 32768 scrambling codes defined in the system.

64. (New) The method of claim 63, wherein the 32768 scrambling codes are divided into 512 groups with 64 codes in each group and there is a one-to-one correspondence between the group of scrambling codes for the preamble in the cell and a primary scrambling code used in the downlink of the cell.

65. (New) The method of claim 64, wherein an n:th scrambling code for the message corresponds to $S_{c\text{-}msg,,n}$, where $n = 8192, 8193, \ldots, 40959$ is based on a scrambling sequence and $n = 64 \times m + k + 8176$, where $m, k = 16, 17, \ldots, 79$ and $m = 0, 1, 2, \ldots, 511$.

66. (New) The method of claim 65, wherein when long scrambling codes are used, $S_{c\text{-}msg,n}(i) = C_{long,n}(i)$, $i = 0, 1, \ldots, 38399$, where a lowest index corresponds to the chip transmitted first in time.

67. (New) The method of claim 66, wherein when short scrambling codes are used, $S_{c\text{-}msg,n}(i) = C_{short,n}(i)$, $i = 0, 1, \ldots, 38399$.

68. (New) The method of claim 45, wherein there are 64 uplink scrambling codes defined per cell and 32768 scrambling codes defined in the system.

69. (New) The method of claim 68, wherein the 32768 scrambling codes are divided into 512 groups with 64 codes in each group and there is a one-to-one correspondence between the group of scrambling codes for the preamble in the cell and a primary scrambling code used in the downlink of the cell.

70. (New) The method of claim 69, wherein an n:th scrambling code for the message corresponds to $S_{c\text{-}msg,,n}$, where $n = 8192,8193, \ldots,40959$ is based on a scrambling sequence and $n = 64 \times m + k + 8176$, where m, $k = 16,17,\ldots, 79$ and $m = 0, 1, 2, \ldots, 511$.

71. (New) The method of claim 70, wherein when long scrambling codes are used, $S_{c\text{-}msg,n}(i) = C_{long,n}(i)$, $i = 0, 1, \ldots, 38399$, where a lowest index corresponds to the chip transmitted first in time.

72. (New) The method of claim 70, wherein when short scrambling codes are used, $S_{c\text{-}msg,n}(i) = C_{short,n}(i)$, $i = 0, 1, \ldots, 38399$.